



UNITED STATES PATENT AND TRADEMARK OFFICE

M

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,208	02/17/2004	Xiaohua Shi	Intel/17851	9918

34431 7590 10/05/2007
HANLEY, FLIGHT & ZIMMERMAN, LLC
150 S. WACKER DRIVE
SUITE 2100
CHICAGO, IL 60606

EXAMINER

VO, TED T

ART UNIT	PAPER NUMBER
----------	--------------

2191

MAIL DATE	DELIVERY MODE
-----------	---------------

10/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<p align="center">Office Action Summary</p>	Application No. 10/780,208	Applicant(s) SHI ET AL.	
	Examiner Ted T. Vo	Art Unit 2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the amendment filed on 07/10/2007.

Claims 1-30 are pending in the application.

Response to Arguments

2. The arguments given in Remarks, filed on 07/10/07 have been considered but not persuasive.

- Regarding the content and arrangement of the present specification, the amendment in the specification remains failed to comply with 1.77(b). See MPEP 6.02. The content of the specification should include the section headings according to 1.77(b), the section headings are such as

- (f) BACKGROUND OF THE INVENTION.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.

The section heading (f) should include sub sections.

- (1) Field of the Invention.
- (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

The section headings made in the amended specification at p. 1, "TECHNICAL FIELD" and "BACKGROUND", filed on 07/10/2007, are not correctly arranged or not the section headings according to 1.77(b).

Furthermore, the MPEP indicates that the phrase "Not Applicable" should follow the section heading if there is no text.

Also see MPEP 1302:

When an application is apparently ready for allowance, it should be reviewed by the examiner to make certain that the whole application meets all formal and substantive (i.e., statutory) requirements and that the language of the claims is enabled by, and finds adequate descriptive support in, the application disclosure as originally filed. Neglect to

Art Unit: 2191

give due attention to these matters may lead to confusion as to the scope of the patent. Frequently, the invention as originally described and claimed was of much greater scope than that defined in the claims as allowed. Some or much of the subject matter disclosed may be entirely outside the bounds of the claims accepted by the applicant. In such case, the examiner should require the applicant to modify the brief summary of the invention and restrict the descriptive matter so as to be in harmony with the claims. However valuable for reference purposes the examiner may consider the matter which is extraneous to the claimed invention, patents should be confined in their disclosures to the respective inventions patented (see 37 CFR 1.71 and 1.73). Of course, enough background should be included to make the invention clearly understandable. See MPEP § 608.01(c) and § 608.01(d). Form paragraphs 13.07 and 13.08 may be used.

The specification that does not comply with the requirements such as the contents and the section headings in the present specification are not included or not arranged as set forth would not place the application in the condition for allowance if the claims were allowed. Therefore, amendment pursuant to the rules set forth is required.

- With regard to the arguments to the rejection under 101, it should be noted that the claim recites a method comprising merely manipulates an element in a set of nodes such as allocating a first node; storing a value in a thread-local variable field in the first node; and identifying a second node in a data structure allocated by a runtime environment while an operating system associated with the runtime environment is in an unlocked condition. The claim as a whole does nothing to transform to a real-world result. Furthermore, there is no claim scope definition so that it defines a purpose. It is unclear what this method is doing since the final phrase of the method is merely for identifying another node, where a node recited in the in claim might be everything like a circle presented in a paper or like an abstract tree structure. Such a method is merely mental. It also noted that the specification does not include a summary of the invention to point out the invention. A statutory method claim requires transforming to a real-world result or producing a "useful, concrete and tangible result". State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02. The claim does not produce anything since it is only a generic method, and this method is manipulating nodes. It is similarly to the manipulation of additions and subtractions without a real-world result. Applicants' argument fail to point out where is a "useful, concrete and tangible result" produced by this method.

Art Unit: 2191

Therefore, the method of the claims 1-10 is merely manipulating an abstract idea. It implies that the apparatus and the medium of Claims 11-30 that perform the non-statutory method are not statutory as the same reason as set forth.

- With regards to the argument to the rejection under 102, the argument fails to be persuasive because it fails to direct to the limitation of the claims, where the examiner provided rationale that:

Fang discloses "*allocating a first node*" - See p. 3, the section 2.3, Figure 1, node 0.

Fang discloses "*storing a value in a thread-local variable field in the first node*" - See Figure 1, i.e., object value/reference of 'a' by thread T1, where the rectangular notation represent Java thread stack that store the values reachable by the thread);

Fang discloses "*identifying a second node in a data structure allocated by a runtime environment while an operating system associated with the runtime environment is in an unlocked condition*" - See Node 1 is second, and note 1 is also identified by a of thread T1; See sec. 3, start at p. 3, for example, "Upon releasing a lock, all updated values...".

While the purpose of claim is unclear, it merely manipulates the nodes in a node data structure. Such claiming reads on the acts shown in the reference. Furthermore, the argument fails to point out the patentable if it presents in the claims. The claims as a whole do as viewing, which is easily achieved by any ordinary of the arts when accessed to a tree structure displayed in a computer, whether it is static or dynamic.

In rejecting claims under 35 U.S.C. § 102, a single prior art reference that discloses, either expressly or inherently, each limitation of a claim invalidates that claim by anticipation. *Perricone v. Medicis Pharmaceutical Corp.*, 432 F.3d 1368, 1375-76, 77 USPQ2d 1321, 1325-26 (Fed. Cir. 2005), citing *Minn. Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1565, 24 USPQ2d 1321, 1326 (Fed. Cir. 1992). Anticipation of a patent claim requires a finding that the claim at issue "reads on" a prior art reference. *Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 1346, 51 USPQ2d 1943, 1945 (Fed. Cir. 1999) ("In other words, if granting patent protection on the disputed claim would allow the patentee to exclude the public from practicing the prior art, then that claim is anticipated, regardless of whether it also covers subject matter not in the prior art.") (Internal citations omitted).

Therefore, the argument is not persuasive.

Specification

3. This Specification remains objected to under 1.77(b). The contents of section headings and/or the arrangement should comply with the requirements set forth in MPEP. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading.

The section heading, Summary of the invention, should present in the application. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. The claims 1-30 are rejected under 35 U.S.C 101 because the claimed invention is directed to non-statutory subject matter.

As per Claims 1-10: Claims 1-10 recite a generic method. A claimed invention as a whole must accomplish a practical application. The claims simply recite, "a method comprising", no practical application is mentioned or founded in this generic method. Furthermore, a statutory method claim requires producing a "useful, concrete and tangible result". State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02. In regard to the term "tangible result", the method claim must produce a real-world result.

In this claimed method as a whole, it merely recites allocating a first node, storing a value, and identifying a second node. Its acts do not differ from the generic acts, adding, subtracting, multiplying, etc. No real-word result is found. The method solely is an arrangement of elements in a program per se. Fail to produce a tangible result; the method of claims 1-10 merely recites an abstract idea.

Art Unit: 2191

As per Claims 11-30:

Even these claims recited an apparatus and machine readable medium associated with a processor; the claims do not produce a practical application. The claims are solely converted from the method of claims 1-10, which are identified as not accomplish a practical application; therefore, the claims merely recite abstract ideas.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Fang et al., "Efficient Global Object Space Support for Distributed JVM on Cluster", IEEE, 2000.

Given the broadest reasonable interpretation of followed claims in light of the specification.

As per Claim 1: Fang discloses,

A method comprising: allocating a first node (See p. 3, the section 2.3, Figure 1, node 0); **storing a value in a thread-local variable field in the first node** (See Figure 1, i.e., object value/reference of 'a' by thread T1, where the rectangular notation represent Java thread stack that store the values reachable by the thread); **and identifying a second node** (Node 1 is second, and note 1 is also identified by a of thread T1) **in a data structure allocated by a runtime environment while an operating system associated with the runtime environment** (i.e. an access cause by T2, as explained in Figure 1) **is in an unlocked condition** (See sec. 3, start at p. 3, for example, "Upon releasing a lock, all updated values...").

Art Unit: 2191

As per Claim 2: Fang discloses, **A method as defined in claim 1, further comprising: storing a second value** (i.e. the execution of c associated with the thread T1) **in a stack address field in the first node** (See sec. 2.3, rectangular notation indicated as Java thread stack frame, where stack is used to store address values of object reference in the thread stack), **wherein the stack address field is associated with a stack allocated by the operating system; and establishing a relationship between the first and second nodes in the data structure based on a value of the stack address field** (i.e. the tree as seen in the Node 0 structure).

As per Claim 3: Fang discloses, **A method as defined in claim 2, wherein the relationship between the first and second nodes comprises a value in a stack address field in the second node that is greater than the second value in the stack address field in the first node** (i.e. address value of object c which is reachable by thread T1 and T2).

As per Claim 4: Fang discloses, **A method as defined in claim 1, wherein the thread-local variable field comprises a high-level language data structure** (For example multi-thread Java Program (see Abstract)).

As per Claim 5: Fang discloses, **A method as defined in claim 4, wherein the high-level language data structure comprises at least one of a C/C++ structure, a C++ class, a Java class, and a C# class** (i.e. multi-thread Java Program (see Abstract)).

As per Claim 6: Fang discloses, **A method as defined in claim 1, wherein the thread-local variable field comprises an indirect reference** (Whatever the object reference stored in thread stack, depending upon the tree structure).

As per Claim 7: Fang discloses, **A method as defined in claim 6, wherein the indirect reference comprises at least one of a C/C++ pointer, a Java reference, a C++ reference, a C# reference, and an assembly language indirect memory reference** (e.g. "Java reference", as in the manner of the reference).

As per Claim 8: Fang discloses, **A method as defined in claim 1, wherein the first node comprises at least one of a statically allocated node and a dynamically allocated node** (refer to the tree structure of Figure 1).

Art Unit: 2191

As per Claim 9: Fang discloses, ***A method as defined in claim 1, wherein the data structure comprises at least one of a linked list-based data structure, an array, a queue-based data structure, a stack-based data structure, and a tree-based data structure*** (Refer to the stack-based as of JVM disclosed in the manner of the reference).

As per Claim 10: Fang discloses, ***A method as defined in claim 1, wherein the runtime environment comprises a virtual machine*** (The reference is a JVM runtime environment).

As per Claims 11-20: Fang discloses the apparatus of claims 11-20. See rationale addressed in the rejection of claim 1-10.

As per Claims 21-30: Fang discloses the machine readable medium of claims 21-30. See rationale addressed in the rejection of claim 1-10.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted T. Vo whose telephone number is (571) 272-3706. The examiner can normally be reached on 8:00AM to 4:30PM.

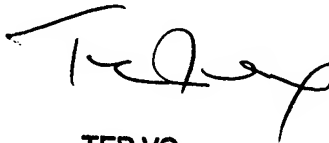
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Y. Zhen can be reached on (571) 272-3708.

Art Unit: 2191

The facsimile number for the organization where this application or proceeding is assigned is the Central Facsimile number **571-273-8300**.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTV
September 28, 2007



TED VO
PRIMARY EXAMINER